

REMARKS

Claims in the case are 1, 3 and 5, upon entry of this amendment. No claims have been amended, added or cancelled herein.

Claims 4, 6 and 7 were previously cancelled without prejudice in an Amendment dated 15 March 2005. Claims 2 and 8-25 were previously cancelled without prejudice in an Amendment dated 14 September 2004, pursuant to a Restriction Requirement (dated 1 October 2003) and an Election (dated 30 December 2003).

Applicants note with appreciation the withdrawal of the previous rejection of Claims 1-5 under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 6,331,233 (**Turner**), as stated on page 2 of the present Office Action of 26 May 2005.

Claims 1, 3 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent Application Publication No. US 2002/0072475 A1 (**Michaluk '475**). This rejection is respectfully traversed with regard to the following remarks.

Michaluk '475 discloses niobium metal articles (e.g., sputtering targets) that have homogeneous texture through the **thickness** of the product. More particularly, Michaluk '475 discloses niobium metal articles that have primary {111}-type texture substantially throughout the **thickness** of the article, and/or having an absence of strong {100} texture bands within the **thickness** of the article. See page 2, paragraphs [0019] and [0030] of Michaluk '475.

The refractory metal plate of Applicants' claims has a distribution of {100} and {111} crystallographic orientations that varies by less than 30 percent **across the surface of any plane of the plate** (the planes being orthogonal to the thickness of the plate). In addition, the refractory metal plate of Applicants' claims has a distribution of {100} and {111} crystallographic orientations that varies by less than 30 percent across any thickness of the plate.

Michaluk '475 provides no disclosure, teaching, suggestion or enablement with regard to a niobium (or tantalum) article (e.g., a sputtering target or plate) having a uniform distribution of {100} and {111} crystallographic orientations **across the surface** of any plane of the article. In addition, Michaluk '475 provide no

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disclosure, teaching, suggestion or enablement with regard to a niobium (or tantalum) article (e.g., a sputtering target or plate) having a uniform distribution of {100} and {111} crystallographic orientations across the thickness of the article.

The method disclosed by Michaluk '475 at paragraph [0038] through [0042] is so general as to fail to amount to a sufficient disclosure that would motivate or otherwise enable a skilled artisan to prepare a niobium (or tantalum) metal plate having a uniform distribution of {100} and {111} crystallographic orientations across the **surface** of any plane of the plate, and through any thickness of the plate.

Attention is directed to the declaration, which is included in the appendix herewith. The declaration provides the results of texture analysis of a tantalum sputtering-target plate that was prepared in accordance with the method disclosed by Michaluk '475, in particular at paragraph [0040] thereof. From a mere visual evaluation of the map of textures across the surface of any plane of the plate (e.g., looking left to right along the three sections), it can be seen that a plate prepared in accordance with the method described by Michaluk '475 (i.e., Plate 475) does not have uniform {111} orientations or uniform {100} orientations there-across. In addition, a mere visual evaluation of the map of textures through the thickness of any of the three sections of the plate prepared in accordance with the method described by Michaluk '475 (i.e., Plate 475) does not have uniform {111} orientations or uniform {100} orientations there-through.

Plates according to Applicants' present claims, however have a distribution of {100} and {111} crystallographic orientations that is uniform to the degree described both (i) across the surface of any plane, and (ii) through any thickness of the plate, as can be seen from a visual evaluation of the map of textures provided in the declaration relative to Plate 286.

In light of the preceding discussion, and the data of the declaration included herewith, the disclosure of Michaluk '475 is not enabling or motivating with regard to providing a method of preparing a niobium (or tantalum) target that has uniform {111} and/or {100} crystallographic orientations across the surface of any plane of the target, or through any thickness of the target. In light of Michaluk '475's failure of enablement, the disclosure of Michaluk '475 is not deemed to reach or touch upon the subject matter of Applicants' present claims. In addition, the disclosure of


Michaluk '475 as to niobium metal articles having primary {111}-type texture substantially throughout the thickness of the article, and/or having an absence of strong {100} texture bands within the thickness of the article, is deemed to be at most generic, and does not reasonably amount to a disclosure or suggestion of the refractory metal plate of Applicants' present claims.

"The test of obviousness *vel non* is statutory. It requires that one compare the claim's 'subject matter as a whole' with the prior art 'to which said subject matter pertains.'" *In re Ochiai*, 71 F.3d 1565, 1569 (Fed. Cir. 1995). "The Patent and Trademark Office (PTO) must consider all claim limitations when determining patentability of an invention over the prior art." *In re Lawry*, 32 F.3d 1579, 1582 (Fed. Cir. 1994). "Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference." *In re Kotzab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313 (Fed. Cir. 2000). Modifying "prior art references without evidence of such a suggestion, teaching or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability -- the essence of hindsight." *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999).

In light of the preceding remarks, Applicants' claims are deemed to be unobvious and patentable over Michaluk '475. Reconsideration and withdrawal of this rejection is respectfully requested.

In light of the amendments herein and the preceding remarks, Applicants' presently pending claims are deemed to define an invention that is unanticipated, unobvious and hence, patentable. Reconsideration of the rejections and allowance of all of the presently pending claims is respectfully requested.

Respectfully submitted,

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APPENDIX

Declaration of Mr. Peter R. Jepson, under 35 U.S.C. § 132.